

MINARIKOVA, Dagmar

Mineralogical and petrographic characteristics of the  
Quaternary sediments of the southern part of Zahorská návina.  
Geol prace 64:141-150 '63.

1. Dionyz Stur Geological Institute, Bratislava.

MINARIKOVA, E., MUDr.

Level of blood bilirubin in premature infants. Cesk. pediat. 12  
no.7:606-610 5 July 57.

1. Detska klinika v Olomouci, prednosta doc. MUDr A. Mores  
Kojenecky ustan v Olomouci, prednosta prim. MUDr M. Vanharova.

(ERYTEROBLASTOSIS, FETAL, blood in  
bilirubin levels in premature inf. (Cz))

(BILIRUBIN, in blood  
in fetal erythroblastosis of premature inf. (Cz))

(INFANT, PREMATURE, blood in  
bilirubin in fetal erythroblastosis (Cz))

WONDRAK, Eduard; MINARIKOVA, Eva

An unusual picture of chylous peritonitis after injury of the abdomen  
in childhood. Cesk. pediat. 16 no.9:823-826 S '61.

1. Chirurgicka klinika Palackeho university v Olomouci, prednosta  
prof. Dr. Sc. MUDr. Vl. Rapant Detska klinika Palackeho university v  
Olomouci, zastupce prednosti as. MUDr. L. Pelikan.

(ABDOMEN wds & inj)  
(PERITONITIS in inf & child)

NEDRSTA, M.; DVORACEK, C. MINARIKOVA, E.

Preliminary experiences with germicidal ultraviolet rays in pneumocystic pneumonia. Cesk. pediat. 14 no.1:31-38 5 Jan 59.

I. Kojenecky ustav v Sumperku, Patol-anatomicky ustav a Detka klinika v Olomouci. M. N., Kojenecky ustav, Sumperk.

(PNEUMONIA, INTERSTITIAL PLASMA CELL, ther.)

ultraviolet rays (Cz)  
(ULTRAVIOLET RAYS, ther. use  
interstitial plasma cell pneumonia (Cz))

MINARIKOVA, L.

TECHNOLOGY

periodicals: PRUMYSL POTRAVIN Vol. 9, no. 10, Oct. 1958

MINARIKOVA, L.; KOROMZAY, F. Possibilities of applying Fischer's method of determining water in some food products. p. 538.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no.5  
May 1959, Unclass.

CZECHOSLOVAKIA / Chemical Technology. Chemical Products H  
and Their Applications. Fermentation Industry.

Abs Jour: Ref Zhur-Khimiya, 1959, No 4, 13419.

Author : Minarikova, L.; Stuchik, V.

Inst : Not given.

Title : Use of the Fischer Method For Inspecting the  
Production of Dry Baking Yeasts.

Orig Pub: Kvasny prumysl, 1958, 4, No 8, 187-188.

**Abstract:** It is shown that by observing required conditions,  
the Fischer method can be used for inspecting  
vitamin-rich dry yeast production. -- Authors'  
resume.

Card 1/1

HAUFTOVA, D.; SEIDLOVA, V.; SLAVICEK, J.; MINARIKOVA, E.; VALACH, V.

Wilson's disease without neurological symptoms. Vnitri lek. II  
no. 2:105-112 F '65

I. I. vnitri klinika Palackeho University v Olomouci (prednosta  
prof. MUDr. P. Lukáč); Detska klinika Palackeho University v  
Olomouci (prednosta: prof. MUDr. J. Lhotak); Ustredni biochemicke  
laboratoare FN v Olomouci (prednosta: MUDr. R. Podivinsky) a  
Ustav patologicke anatomie lekarske fakulty Palackeho University  
v Olomouci (prednosta doc. MUDr. V. Valach).

HORECKY, J.; SEVCIK, L.; STUBNA, J.; MINARIKOVA, F.

Importance of hypothermia in ischemic anoxia of the myocardium.  
Bratisl. lek. listy 43 Pt. 1 no.7:385-393 '63.

1. Oddelenie kardiopulmonalnej chirurgie Vedeckeho laboratoria  
pre vyskum chirurgickej patofyziologie Lek. fak. Univ. Komenskeho  
v Bratislave, veduci doc. MUDr. M. Kratochvil.  
(HYPOTHERMIA, INDUCED) (CORONARY DISEASE)  
(POTASSIUM) (SODIUM) (OXIMETRY) (DOGS)

L 22406-66  
ACC NR: AF5021657

ENT(1)/T

JK

(A)

SOURCE CODE: CZ/0067/65/014/004/0221/0224

25

22

AUTHOR: Richter, J.; Vitkova, V.; Stehlík, J.; Minarikova, H.

ORG: Regional Public Health Epidemiological Station KUNZ of the North Czech KNV  
(Krajska hygienicko-epidemiologicka stanice KUNZ Severoceskeho KNV, Usti nad Labem);  
District Public Health Epidemiological Station OUNZ (Okresni hygienicko-epidemiolo-  
gicka stanice OUNZ, Teplice)

TITLE: The dynamics of tularemia antibodies following vaccination with live tularemia  
vaccine <sup>4455</sup> <sub>b</sub>

SOURCE: Ceskoslovenska epidemiologie, mikrobiologie, imunologie, v. 14, no. 4, 1965,  
221-224

TOPIC TAGS: hygiene, health, health service, disease incidence, epidemiology, diag-  
nostic instrument, preventive medicine.

ABSTRACT: The article reports on the vaccination of the most exposed groups of the  
population to the tularemia epidemic in the northern region of Czechoslovakia (North  
Bohemia) and the determination of those inhabitants most subject to infection. Be-  
cause of lack of experience with vaccines and vaccination technique it was decided to  
carry out the "control" of vaccination by following up the formation of tularemia  
antibodies in the vaccinated groups at specific time intervals. Sixty-eight (68)

Card 1/3

L 22406-66

ACC NR: AF5021657

people in whom tularemia antibodies had not been detected before vaccination were included in the control group. These were subsequently vaccinated and a record kept of the positive, negative and weak post-vaccination reactions. Dry, live tularemia vaccine prepared at the Odesky Institut epidemiologie a mikrobiologie I.I. Mecnikova (The I.I. Mecnikov Odessa Institute of Epidemiology and Microbiology) in the USSR and the vaccinations and recording of the reactions were carried out in accordance with a vaccination handbook also of Soviet origin. Serum was taken from those who had been vaccinated at intervals of 30, 90, and 360 days after vaccination and stored at -20°C until laboratory evaluation time. The presence of *P. tularensis* antibodies (by the agglutination and the indirect haemagglutination reactions) and of *Br. abortus* agglutination antibodies was determined. The serum in the determination of agglutination antibodies was diluted in geometric series from 1:10 to 1:1280 and the reaction proceeded over 18 hrs. of incubation at 37°C. Dr. Hauser of KHEs in Ceske Budjovice supplied the raw, unprocessed polysaccharide antigen prepared from the *P. tularensis* strain 645/62 Ref. Of the 68 samples of serum investigated, tularemia antibodies were found by the agglutination method or the indirect agglutination method in 53 of them, and of these latter, 51 samples of serum were from patients designated as positive after vaccination, and two samples of serum from patients designated as slightly positive. Antibodies against *Br. abortus* were not detected in a single case. Success in the vaccination operation must be attributed to perfect mastery of the vaccination technique, but also to the correct interpretation of the vaccination reaction. In comparison with other researchers in the field, the authors feel that the

Card 2/3

I. 22406-66  
ACC NR: AF5021657

number of antibodies detected by the methods used appears relatively low. P. Cizek did the statistical evaluation. Orig. art. has: 2 tables.

SUB CODE: 06 SUBM DATE: none ORIG REF: 004 OTH REF: 013

Card 3/3 (b)

SMISHEK, M. [Smisek, M.]; CHERNY, S. [Cerny, S.]; MINARZHOVA, I. [Minarova, J]

Semiautomatic measurement device attached to a volumetric adsorption apparatus. Zhur. fiz. khim. 35 no. 4:939-941 Ap '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut vozdukhotehniki, Chekhoslovakiya.  
(Adsorption)

SMISEK, Milan; CERNY, Slavoj; MINAROVA, Jindra

Structural inhomogeneity of charcoal activated by  
gaseous agents. Chem prum 12 no.5:237-239 My '62.

1. Vyzkumny ustav vzduchotechniky, Praha. 2. Nynejsi  
pracoviste: Ustav Fyzikalni chemie, Ceskoslovenska akademie  
ved, Praha (for Smisek and Cerny).

SMISEK, Milan; CERNY, Slavej; MINAROVA, Jindra

Semiautomatic device for measurement of vapor adsorption  
isotherms on volumetrical apparatus. Chem listy 57 no.6:  
638-643 Je '63.

1. Ustav fysikalni chemie, Ceskoslovenska akademie ved, Praha  
a Vyzkumny ustav voduchotechniky, Praha.

~~1/10/86 MINAROVA L~~

5  
2 May

Oscillographic polarography of steroids. Vladimír Morávek, Zdeněk Karásek, and Libuše Blumová (Uvly. Brno, Czech. J. Publ. sci. univ. Masaryk Br., 403-291 (1967)) (in English).—Oscillographic polarography of soins. of pure steroids with a dropping electrode gave oscilograms (I) characteristic of the single steroids. The method can be used for their detm. The first OH group in the cyclohexanoperhydrophenanthrene nucleus increased and addnl. OH groups decreased the slope of I. Esterification and especially replacement of the OH by keto groups gave high I values. The I were completely different for ergosterol and cholesterol and the shape of I differentiates between  $\alpha$ - and  $\beta$ -dimethyl-monooamino deriv. The double bond at A<sup>8</sup> does not basically influence the shape or height of the I. — B. Lusick

Jef

MINAROVJECHECH, V.

Apropos of the origin of structural changes in rat lungs induced by training. Bratisl. lek. listy 44 no.2:79-90 31 Jl '64.

1. Oddelenie zdravotnej starostlivosti o telesnu vychovu Fakultnej nemocnice v Bratislave (veduci MUDr. V. Minarovjech).

CHRENKA, A., inz.; MINARSKY, E., inz.

A new magnetron ionization gauge for the measurement of ultrahigh  
vacua. Slaboproudny obzor 22 no.12:764-765 D '61.

(Electronic measurement) (Vacuum)

MINARSKY, E.

Non-contact measurement of electric conductivity and dielectric constant of semiconducting and dielectrical materials. El tech cas 13 no.1:57-60 '62.

MINARY, Jozsef

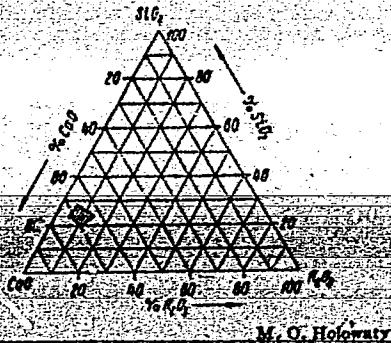
Hungarian Museum of Transportation. Jarmu mezo gep 7 no.5:  
184-188 '60.

MINARY, Jozsef

From Trevithick to Stephenson. Kozleked kozl 20 no. 26:433-436  
28 Je '64.

*Minerals*

Areas of portland cement on ternary diagrams. A. I. Minas (Inst. Refractories and Structural Materials, Acad. Ser. Kazakh. S.S.R.). *Zhur. Priklad. Khim.* 24, 940-4 (1951).—A study of the principal components of portland cement established the limitations as to the compon. of the cements shown in the attached ternary diagram.



M. O. Holoway

MINAS, A. I.

Chemical Abstracts  
May 25, 1954  
Cement, Concrete and  
other Building Materials

Binding material from marl, having a low basic modulus.  
A. I. Minas, Vestnik Akad. Nauk Kazakh. S.S.R. 10,  
No. 6 (Whole-No. 102), 92-101 (1953).—The possibility of  
prep. of binding materials from magnesian marl with low  
hydraulic modulus (down to 0.57) was examd. The prod-  
uct of calcining and grinding of such material is a Roman  
cement whose micro-filler is residual free clay matter and  
silica grains. The material suitable for the work should have  
a basic modulus between 1.16 and 1.85 for prepn. of undil.  
product; for dil. cements material with modulus down to  
0.67 can be used which is suitable for low-grade concrete.  
G. M. Kosolapoff

MIMAS, A.I.

Determining the active properties of low-activity hydraulic  
admixture. Izv. AN Kazakh. SSR Ser.gor.dela, met. i streimat.  
no.2:58-70 '54. (MLRA 9:6)  
(Mortar) (Leaching)

MINAS, A.I.

Calculating the raw material mixture for the production of  
cement. Izv. AN Kazakh. SSR Ser. gor. dela, met. i stroimat.  
no.2:98-106 '54. (Cement) (MLRA 9:6)

MINAS, A. I.

"The Influence of the Properties of Local Sand in the Determination of the  
Activity of Cement"  
Izv. AN Kazakh SSR, No 12, 136-142, 1954, (Kazakhstani resume)

The author expounds the results of a comparative investigation into the properties of normal Vol'sk and local Alma-Ata sand for solving the problem of the applicability of the latter for the manufacture of forms made of Portland cement. In this case the author takes into special consideration the form of the sand granules and the mineralogical composition of the sand (BZhGeol, No 6, 1954)

SO: Sun. 492, 12 May 55

MINAS, A.I.

Proposed instruction on the protection against corrosion of  
concrete, brick and adobe structures. Izv. AN Kazakh. SSR  
Ser.gor.dela, met. i stroimat. no.2:170-171 '54. (MLRA 9:6)  
(Corrosion and anticorrosives)(Kazakhstan--Construction industry)

New methods of utilizing fine-grained sand in concrete. V. V. KONSTANTINOV AND A. I. MINAS. *Vestnik Akad. Nauk KazSSR*, 11 [4] (1971). Reduced strength of ordinary mortars and concretes using fine-grained sand is due to insufficient cement paste to envelop the sand grains. To overcome this, two methods were developed which require no excess or only a slight excess of cement. In one method, the amount of cement paste is increased by diluting it with a microfiller (finely ground sand) in the amount of 50% by weight of cement. In the second method, the thickness of the enveloping cement paste sheath is reduced by using finely ground cement (90 to 98% passing through 0.08 mm. openings). Tests with concrete blocks proved satisfactory. Concrete with microfiller showed some what lower frost resistance. B.Z.K.

~~MINAS, A. I.~~, kandidat tekhnicheskikh nauk; MARTYNEKO, P. Ye.,  
~~candidate~~ tekhnicheskikh nauk.

Binding materials from powdered calcium carbide. Vest. AM  
Kazakh. SSR 11 no.9:92-97 p 154. (MLRA 8:2)  
(Calcium carbide)

MINAS, H-L

USSR

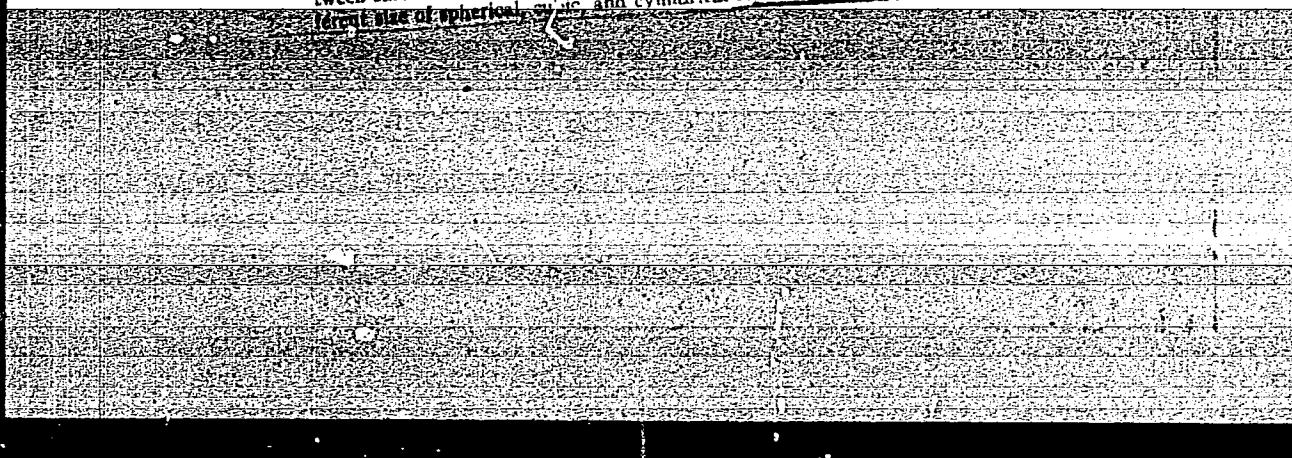
Additional index of activity of hydraulic additions. A. I.  
MINAS. Tsvetnoy, 20 [5] 24-25 (1951).—The use of the amount  
of absorbed CaO as an index of activity is not always applicable  
to those low-active and sometimes medium-active hydraulic ad-  
ditions which absorb the CaO without forming calcium hydro-  
silicates and hydroxilumates. Instead, it is proposed to use an  
index of additional activity. This is the ratio of the average  
amount of CaO absorbed during every 2 days after five filtration  
to the amount of CaO absorbed during the first 2 days, i.e., de-  
fined by the formula:  $\alpha = \frac{\text{CaO absorbed during 2 days}}{\text{CaO absorbed during 2 days}}$   $\times 100\%$ , where  $\alpha = 100$  if CaO absorbed during 2 days  
is equal to CaO absorbed during the first 2 days. The indices of  
activity of CaO absorbed during the first 2 days for a few  
different materials are listed. When  $\alpha$  is over 100%, there is a  
chemical reaction between material and the absorbable CaO and the  
additions; when  $\alpha$  is less than 0.40, the addition stabilizes CaO  
chiefly by one absorption (in this case, activity would be checked  
by another method, preferably by first mixing with dilute lime);  
when  $\alpha$  is between 0.40 and 0.70, such a check is desirable.

B.Z.K.

MINAS A I

✓ Determination of average distance between surfaces of adjacent grains. A. I. MINAS. Izvest. Akad. Nauk Kazakh S.S.R.,  
Met. i Stroymaterial., 1953, No. 6, pp. 33-43.

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001134410001-6



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001134410001-6"

Minas, A.F.

Large-pore concrete from clay-gypsum raw materials.  
A. I. Minas and E. D. Soboleva. Izvest. Akad. Nauk  
Kazakh. S.S.R., Ser. Gornogo Dela, Met. i Stroimaterial.  
1955, No. 5, 65-70 (in Russian).—Clay-gypsum material  
contg. about 60%  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  can be used to make anhy-  
drite cement of mark "100" and Zid-grade structural  
gypsum. With gravel, it can be used to make large-pore  
concrete suitable for wall material. B. Z. Kamich

2

MINAS, A.I.

2

Setting temperature of ground quicklime as an important index of its quality. A. I. MINAS. Izvest. Akad. Nauk Kazakh. S.S.R., Ser. Gornogo Dela, Bui. i Stroimaterial. 1955, No. 6, pp. 127-31. The following relationships between setting temperature and quality were obtained: (a) low-magnesia quicklime—above 85°, 60° to 85°, and below 60° C. for first, second, and third grades, respectively; (b) magnesia quicklime—above 85°, 60° to 85°, and below 60° for first, second, and third grades, respectively.

P.Z.K.

Chem

EM 8/8

MINAS A.I.

Utilization of powdered carbide lime in construction.  
A. I. Minas and P. B. Martynenko. Izv. Akad. Nauk  
Kazakh. S.S.R., Ser. Geog. Delsa, Moshchennye Stroimaterialy,  
1955, No. 5, 392-393 (in Russian). - Powdered carbide lime  
differs from structural hydrated lime in size and shape of  
grains and, possibly, in properties of its surface layers.  
Structural mixes, made from carbide lime have a lower  
plasticity and strength (after hardening) than structural  
hydrated lime. - Powdered carbide lime can be used, without  
processing, in cement-lime structural mixes, as a substitute  
for structural lime. Wet grinding improves bonding char-  
acteristics of carbide lime. B. Z. Kamish.

MIMAS, A. I., kandidat tekhnicheskikh nauk

Rate and acceleration of the hardening of concrete made from  
portland cement. Vest.AN Kazakh.SSR 11 no.8:78-81 Ag'55.  
(Portland cement) (Concrete) (MLRA 9:1)

MINAS. A.I.; MARTYNNENKO, P.Ye.

Thin-walled semicylindrical brick silos and reinforced concrete  
trenches. Izv. AN Kazakh. SSR. Ser. gor. dela, met., stroi. i stroimat.  
no. 10:18-29 '56. (MLRA 10:1)  
(Soils) (Building, Brick) (Reinforced concrete construction)

MINAS, A.I.

Reducing the time needed to determine the activity of hydraulic  
admixtures. Izv.AN Kazakh.SSR.Ser.gor.dela, met., stoi. i stroimat.  
no.10:30-33 '56. (MLRA 10:1)

(Concrete--Testing)

MINAS, Aleksey Illarionovich, kand.tekhn.nauk; KHARCHENKO, V.A., kand.tekhn.

nauk, otdelennyy redaktor; NIMBURG, B.Ya., red.; ROROKINA, Z.P..  
tekhn.red.

[Charts for determining the composition of ordinary concrete] Grafiki  
dlia opredeleniya sostava obuknovennogo betona. Izd. 2-oe, chastichno  
perer. i dop. Alma-Ata, Izd-vo Akad.nauk Kazakhskoi SSR, 1957. 56 p.  
(Concrete) (MIRA 11:2)

MINAS, A.I.

Physical corrosion of building materials. Izv. AN Kazakh. SSR. Ser.  
gor. dela, met., stroi. i stroimmt. no.3:13-39 '57. (MIRA 10:11)  
(Building materials--Testing). (Strains and stresses)

USSR/Diseases of Farm Animals. General Problems.

R

Abs Jour: Ref Zhur-Diol., No 15, 1958, 69472.

Author : Khudaverdiyev, N.; Askerov, A.; Minasarov, A.

Inst :

Title : The Use of Antibiotics for the Control of Certain Diseases in Swine.

Orig Pub: Azerbaydzhan sosyalist kend. teserrufaty. Sots. s. kh. Azerbaydzhana, 1957, No 9, 42-44.

Abstract: No abstract.

Card : 1/1

13

~~MIHAS, A.I.~~

Volumetric changes in structural systems caused by "migration of  
salt solutions from the soil." Trudy Inst. stroi. i stroimat. AN  
Kazakh SSR 1:51-79 '58. (MIRA 11:6)  
(Building materials) (Minerals in soil)

MINAS, A.I.

Changes in the resistance of some structural materials due to  
corrosion. Trudy Inst. stroi. i stroimat. AM Kazakh SSR 2:51-71  
'59. (Corrosion and anticorrosives) (Strength of materials)

MINAS, A.I.

Effect of climatological conditions on the development of salt  
corrosion in building materials. Trudy Inst. stroi. i stroimat.  
AN Kazakh SSR 2:78-97 '59. (MTRA 12:10)  
(Corrosion and anticorrosives) (Building materials)

MINAS, A.I.

Kazakhstan Branch. Izv. ASIA no.4:159-160 '59. (MIRA 13:6)

1. Zamestitel' rukovoditelya Kazakhskogo filiala Akademii stroitel'stva i arkhitektury SSSR.  
(Kazakhstan--Building research)

MINAS, A.I., kand.tekhn.nauk; VAYNSHTEYN, M.Z., inzh.

Using ferroslags as raw materials in making binding materials.  
Stroi.mat. 5 no.12:33-34 D '59. (MIRA 13:3)  
(Slag) (Binding materials)

MINAS, A.I.

Results of studying the salt form of physical corrosion of  
building materials. Trudy Kazakh. fil. ASia no.2:84-  
104 '60. (MIRA 15:2)  
(Building materials)  
(Corrosion and anticorrosives)

MIMAS, A. I.

Using natural resources of Kazakhstan in producing local  
building materials. Stroi.mat. 6 no.1:29-30 Ja '60.  
(MIRA 13:5)

1. Zamestitel' rukovoditelya Kazakhskogo filiala Akademii  
stroitel'stva i arkhitektury SSSR.  
(Kazakhstan--Building materials)

MINAS, A. I., Doc Tech Sci -- "Salt ~~structure~~<sup>form</sup> of the physical  
corrosion of building materials and methods ~~for~~<sup>of</sup> its control."  
Alma-Ata, 1961. (Acad of ~~Build~~<sup>Construction</sup> and Architec ~~ture~~<sup>ture</sup> USSR. Kazakh  
Affiliate) (KL, 8-61, 239)

-186-  
- 185 -

MINAS, A.I., kand.tekhn.nauk

Protecting structures from the salt form of physical corrosion  
which arises in districts with a hot, dry climate. Trydy NII2HB  
no.22:19-24 '61. (MIRA 14:10)

1. Kazakhskiy filial Akademii stroitel'stva i arkhitektury SSSR;  
chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR.  
(Corrosion and anticorrosives) (Concrete--Corrosion)

MINASAKIAN, R. R.

Dissertation: "Formation and Removal of Residual Stresses in Perlitic Chrome-Nickel-Molybdenum Steels." Cand Tech Sci, Central Sci Res Inst of Technology and Machine Building (TsNIITMash), 31 May 54. Vechernyaya Moskva, Moscow, 21 May 54.

SO: SUM 284, 26 Nov 1954

18.7100

7755  
SOV/129-69-2-8/13

AUTHORS: Astaf'yev, A. A., Minasaryan, A. A. (Candidates of Technical Sciences), Kondrashev, A. I. (Engineer)

TITLE: Cooling Rates From Tempering Temperatures for Forgings

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 2, pp 42-47 (USSR)

ABSTRACT: When heat-treating forgings for critical applications, slow cooling rates from tempering temperatures were used to obtain minimal residual stresses. However, such rates prolong the production cycle and decrease productivity of heat treatment shops. Therefore, it was necessary to determine the optimal cooling rates providing minimal residual stresses and high mechanical properties for such forgings. Specimens 75 mm in diam, 190 mm long, were prepared from steel 34KhN2M containing C 0.37; Mn 0.42; Si 0.36; Ni 2.44; Cr 0.99; Mo 0.25%. Preliminary heat treatment

Card 1/9

Cooling Rates From Tempering Temperatures  
for forgings

7752  
Sov/129-60-2-5/13

was used for recrystallization and minimizing initial stresses after forging. In final heat treatment the first 6 specimens were heated to 600° C in saltpeter, held for 2 hr, and cooled with the bath to 300; 350; 400; 450; 500; and 550° C at a rate of 10° C/hr. Specimens were held at these temperatures for 2 hr, cooled in water, and residual stresses determined by a method of Zaks. The second 6 specimens were treated similarly except for higher cooling rates in saltpeter, e.g., when saltpeter temperature was 300° C, cooling rates were 25° C/min. An analysis of the obtained data showed slow cooling from tempering temperature to 400-450° C, and accelerated cooling from that temperature, to be optimal rate of treatment. The second series of experiments concerned the determination of residual stresses in forgings at different cooling rates from tempering temperatures. Steel 40Kh discs 400 mm

Card 2/9

Cooling Rates From Tempering Temperatures  
for ForgingsT752  
SGV/124-61-7-1/1

and 40 KhN 300 mm in diam were normalized from 850-  
860° C, tempered at 630-700° C, and cooled with the  
furnace. Composition of these steels is given in  
Table 1.

Designation of Steel	CHEMICAL COMPOSITION, %						
	C	Mn	Si	S	P	Cr	Ni
40 Kh	0,40	0,65	0,28	0,030	0,027	1,08	0,20
40 KhN	0,43	0,63	0,30	0,030	0,022	0,71	1,28

Subsequently, discs were quenched in water through  
oil and tempered, using special fixture shown in  
Fig. 1.

Card 3/9

Cooling Rates From Tempering Temperatures  
for Forgings

77395  
SCV/141-60-2-4/13

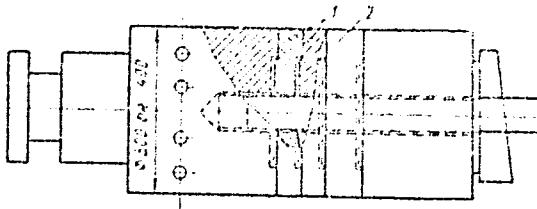


Fig. 1. Fixture for heat treatment of discs. Discs for determination of: (1) residual stresses; (2) mechanical properties.

As a result of experiments, the following conclusions have been made: (1) Cooling of large forgings after tempering in air or in unheated pits leads to increase residual stresses. (2) Optimal cooling rates after tempering for critical application forgings are:

Card 4/9

Cooling Rates From Tempering Temperatures  
for Forgings

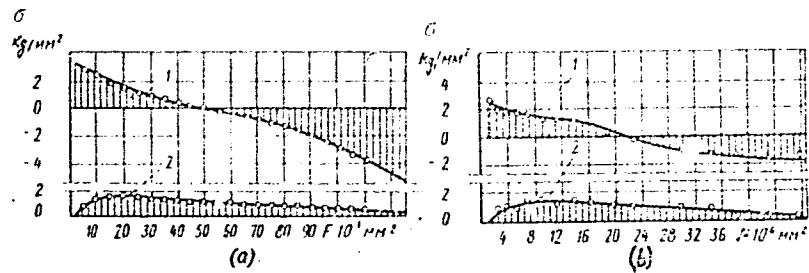
7753  
Sov/123-65-2-5/13

cooling with the furnace to 400° C and subsequent air cooling. Such rates decrease duration of cooling, as compared with complete cooling with the furnace, to 1/3-1/4, and result in permissible residual stresses up to 4 kg/mm<sup>2</sup> (see Fig. 4). These rates are used for large forgings at Novo-Kramatorskiy Machine Building Plant in Kramatorsk (Novo-Kramatorskiy mashinostroitel'nyy zavod).

Card 5/9

Cooling Rates From Tempering Temperatures  
for Forgings

77595  
SGV/120-60-2-8/13



Card 6/9

See Card 7/9 for Caption on Fig. 4.

Cooling Rates From Tempering Temperatures  
for Forgings

77536  
SOV/129-60-2-8/13

Caption for Fig. 4.

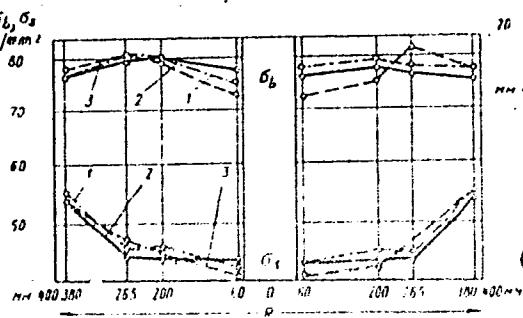
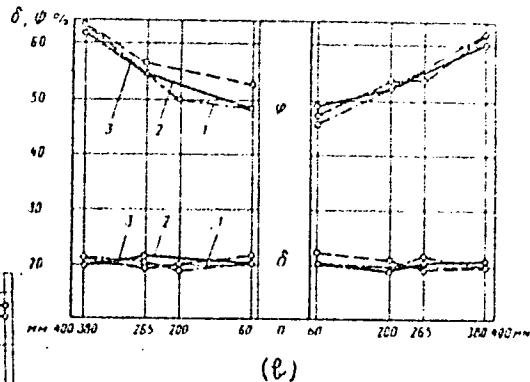
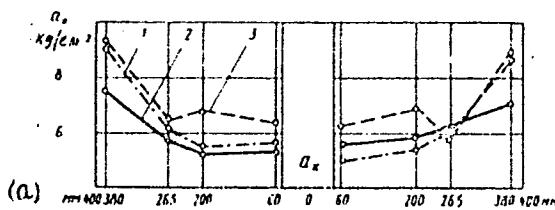
Fig. 4. Residual stresses in disc after cooling with furnace from tempering temperature to 400° C and subsequent air cooling. (6) Residual stress, kg/mm<sup>2</sup>; (f) area, mm<sup>2</sup>; (a) steel 40 Kh, diam 400 mm; (b) steel 40KhN, diam 300 mm; (1) tangential stress; (2) radial stress.

(3) For forgings made from steels inclined to temper brittleness the following interrupted cooling can be used: air cooling from tempering temperature to 400-450° C, holding in the furnace at this temperature, and subsequent air cooling. This method results in comparatively high impact values (see Fig. 5) although residual stresses increase to 5-7 kg/mm<sup>2</sup>.

Card 7/9

Cooling Rates From Tempering Temperatures  
for forgings

77595  
SOV/129-60-2-8/13



Card 8/9

See Card 9/9 for Caption to Fig. 5.

Cooling Rates From Tempering Temperatures  
for Forgings

77595

SOV/129-60-2-2/13

Fig. 5. Mechanical properties of 800 mm diam steel  
40 KhN discs after various cooling rates from  
tempering temperature. (1) Unheated pit; (2) with fur-  
nace to 400° C, then in air; (3) air cooling to  
450° C, holding in the furnace at 450° C, and air  
cooling. ( $a_k$ ) impact strength; ( $\delta$ ) elongation, %;  
( $\psi$ ) reduction of area, %; ( $\sigma_b$ ) tensile strength,  
kg/mm<sup>2</sup>; ( $\sigma_s$ ) yield point, kg/mm<sup>2</sup>.

There are 5 figures; 3 tables; and 1 Soviet reference.

ASSOCIATION: Central Scientific Research Institute of Technology  
and Machinery (TsNIITMASH)

Card 9/9

MINASARYAN, A.A.

Residual stress relief in welded 1Kh18N12T steel pipe. Metalloved.  
i term. obr. met. no. 9:45-51 S '63. (MIRA 16:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i  
mashinostroyeniya.

MINASBEKOV, A.V., inzh.-tekhnolog

Improving silver warping in the manufacutre of worsted goods.  
Tekst.prom. 21 no.1:20-22 Ja '61. (MIRA 14:3)  
(Woollen and worsted manufacture)

MINASBEKOV, A. V.

MINASBEKOV, A. V., inzh.-tekhnolog

Advantages of the use of a flat support reed in silver warping.  
Tekst. prom. 21 no.10:44-46 O '61. (MIPA 14:19)

1. Yerevanskiy kamvol'no-sukonnyy kombinat.  
(Warping machines)

MINASBEKYAN, M.

Experimental investigation of the thermal state of a cylinder piston group of a free-piston diesel compressor. Prom.Arm. 6 no.9:60-63  
S '63. (MIRA 16:12)

1. Armyanskij filial Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhaniki.

MINASBEKYAN, M.S.; SULTANYAN, G.A.

Errors due to the thermal conductivity of thermocouple wires.  
Izv. AN Arm. SSR. Ser. tekhn. nauk 17 no.2:79-82 '64  
(MIRA 17:7)

I. Armyanskij filial Vsesoyuznogo nauchno-issledovatel'skogo  
instituta elektromekhaniki.

STOENESCU, A.; CIRONEANU, I.; SIRBU, E.; VISAN, C.; MINASCURTA, C.; BRETEANU, E.; MOLDOVAN, T.

Observations on the distribution, incidence, economic importance and control of bovine hypodermatosis in the Rumanian People's Republic. Wiad. parazyt. 11 no.1:296-304 '65.

MINASCURTA, S (DR)  
SURNAME (in caps); Given Name

Country: Rumania

Academic Degrees:

Affiliation: Regional Veterinary Laboratory (Laboratorul Veterinar  
Regional), Iasi.  
Source: Bucharest, Probleme Zootehnice si Veterinare, Vol XI, No 10,  
Oct 1961, pp58-62.  
Data: "Observations on Certain Foci of Anaerobe Enterotoxemia in  
Sheep."

Authors:

SIRNON, E., -Dr.-  
MINASCURTA, S., -Dr.-  
BADEA, A., -Veterinarian.-  
CRISTEA, S., -Veterinarian.-

*Minascurta, S.*

RUMANIA

MICU, I.; OANA, C.; MANTA, I.; IOAN, Elena; CUCIUREANU, Georgeta;  
MIHUL, Valentina; VINTU, C.; GRADINARU, Liliana; GRADINARU, I.;  
IOSEFSOHN, Judith; MINASCURTA, S.; MOSANU, P.; COTAE, Gh.

Clinic of Contagious Diseases Iasi, Iasi Regional Sanepid.  
(Clinica de boli contagioase Iasi, Sanepidul regional Iasi.)  
- (for all)

Bucharest, Viata Medicala, No 7, 1 Apr 63, pp 457-460.

"Epidemic of Ornithosis in a Rural Locality."

(13)

9(1) 6(6)

S/107/60/000/03/039/051  
DM43/D006

AUTHOR: Minash, L. (Leningrad)

TITLE: A Wide-Range High Gain TV Receiver Antenna

PERIODICAL: Radio, 1960, Nr 3, pp 50-51 (USSR)

ABSTRACT: The author recommends a wide-range, directional antenna for receiving TV stations on all 12 channels (49-230 Mc). A constructional diagram of this antenna is given (Figure 2). The author recommends using thick-walled brass tubes instead of D-16 alloy tubes which are difficult to weld and AM2 aluminum tubes which are expensive. Supporting tubes must be 40-60 mm in diameter while vibrator tubes must be 16-24 mm in diameter. The feeder is made of any coaxial cable with 75 ohms impedance, for example, RK-3 cable. There are 3 sets of diagrams and 1 diagram. ✓

Card 1/1

MINASH, L. (g.Leningras)

Wide-band television receiving antenna. Radio no.8:42-44 Ag  
'60. (MIRA 13:9)  
(Television--Antennas)

MINASH, L., inzh. (Leningrad)

Simplified design of a multichannel television antenna. Radio  
no. 5:42 My '63. (MIRA 16:5)  
(Television--Antennas)

1. MINASHIN, I.
2. USSR (600)
4. Coal-handling Machinery
7. Making the operation of the circular dumper automatic, I. Minashin, Mast.ugl.  
2 no. 2, 1953.
  
9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

MINASHIN, I.Ye.

Circular saws with automatic feed. Bezop.truda v prom. 1  
no.10:32 0 '57. (MIRA 10:11)

1. Glavnnyy mekhanik shakhty No.42 tresta Donskoyugol'.  
(Saws)

MINASHIN, M.YE.

Category : USSR/Nuclear Physics - Nuclear Engineering and Power

C-8

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6105

Author : Blokhintsev, D.I., Minashin, M.Ye., Sergeyev, Yu.A.

Title : Physical and Thermal Calculations for the Reactor of the  
Atomic Electric Station of the Academy of Sciences of the USSR

Orig Pub : Atom. energiya, 1956, No 1, 24-42

Abstract : The initial quantities in the design of the reactor of the atomic electric station of the Academy of Sciences of the USSR were the useful power (5,000 kw) and the refueling cycle, which first was determined to be 100 days. In addition, it was required that the construction of the fuel elements be designed for a minimum U<sup>235</sup> enrichment. The purpose of the physical calculations was to refine the dimensions of the reactor, to determine the excess reactivity, and to design the control and protection systems. The calculations for the reactor were based on the age theory. The purpose of the thermal calculations was to determine the temperature operating conditions of the individual units of the reactors, primarily of the fuel elements, under various operating conditions of the reactor:

Card : 1/2

AUTHORS: Krasin, A. K., Minashin, M. Ye., Sviridenko, V. Ya. SOV/89-5-2-2/36

TITLE: The Influence of the Temperature of a Neutron Gas on the Duration of the Runs of the Fuel and Its Regeneration in a Power Reactor (Vliyaniye temperatury neytronnogo gaza na prodolzhitel'nost' kampanii i vosproizvodstvo goryuchego v energeticheskem reaktore)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 2, pp. 111-118 (USSR)

ABSTRACT: The calculation of the influence exercised by the temperature of the neutron gas on the duration of the run of the reactor, on the production of  $Pu^{239}$ , and on the amount of the electric energy generated is dealt with. Calculations relate especially to the following two variants of reactors:

Card 1/4

	Variant I	Variant II
a) Heat output of the reactor	140 MW	140 MW
b) Quantity of uranium	24,5 t	24,5 t
c) Initial enrichment of uranium	1%	1,5%
d) Material of tubes for coolant	Zr of a thickness of 0,5 mm	steel of a thickness of 0,2 mm

The Influence of the Temperature of a Neutron  
 Gas on the Duration of the Runs of the Fuel and  
 Its Regeneration in a Power Reactor

SOV/89-5-2-2/36

Card 2/4

	Variant I	Variant II
e) Canning material of fuel elements	Zr of a thickness of 0,3 mm	steel of a thickness of 0,2 mm
f) Moderator material in core and reflector	graphite (1,67 g/cm <sup>3</sup> )	graphite (1,67 g/cm <sup>3</sup> )
g) Coolant	Na	Na
h) Diameter of core	500 cm	500 cm
i) Height of core	400 cm	400 cm
j) Thickness of lateral and basic reflectors	80 cm	80 cm
k) Number of cells	400	400
l) Number of channels for regulating-and safety rods	50	50

The Influence of the Temperature of a Neutron  
Gas on the Duration of the Runs of the Fuel and  
Its Regeneration in a Power Reactor

SOV/89-5-2-2/36

	<u>Variant I</u>	<u>Variant II</u>
m) Step of quadratic lattice	22 cm	22 cm

The results obtained are given only in form of curves. It was found that for reactors of the types mentioned the most favorable neutron temperature is that between 900 and 1 000°K.

The dependence of the run of the reactor and of the conversion ratio on the temperature of the neutron gas was determined also for two other types of reactors. The results are shown in form of graphs. The following reactors are concerned:

1.) Homogeneous Sodium-Graphite Reactor:

- a) Heat output: 250 MW
- b} Weight of the total quantity of uranium: 19 t
- c) Uranium concentration: 0,002
- d) Initial enrichment of uranium: 6%
- e) Material of tubes for coolant: stainless steel of 0,3 mm thickness

Card 3/4

The Influence of the Temperature of a Neutron  
Gas on the Duration of the Runs of the Fuel and  
Its Regeneration in a Power Reactor

SOV/89-5-2-2/36

- f) Diameter of core: 8 m  
g) Height of core: 6 m  
2.) Heterogeneous Uranium-Graphite Reactor:  
a) Heat output: 500 MW  
b) Total weight of uranium: 132 t  
c) Initial enrichment of uranium: 1%  
d) Type of fuel elements: cylindrical slugs of 3 cm diameter  
e) Canning material: stainless steel of 0,3 mm thickness  
f) Coolant: CO<sub>2</sub>  
g) Diameter of core: 8 m  
h) Height of core: 8 m  
i) Step of lattice: 20 cm

There are 14 figures, 1 table, and 2 references, 2 of which are Soviet.

SUBMITTED: May 9, 1958

Card 4/4

Minashin, M.Y.

**LITERATURE:**

Dolleish, N. A., Krasin, A. K., Al'bekovskiy, S. V., *Zhurnal Fizika i Khimii Tverdogo Tela*, No. 1, 1959.

Grigor'ev, A. M., Florin'skiy, S. V., *Zhurnal Fizika i Khimii Tverdogo Tela*, No. 1, 1959.

Yamamoto, I., Ina, T., Suganuma, K., Ueda, T., Mitayev, Yu. I., *Zhurnal Fizika i Khimii Tverdogo Tela*, No. 1, 1959.

**TITLE:** A Uranium-Graphite Reactor With Ductileating of 3% Sea of Azov graphite (Uranium-graphite reactor with paraffine moderator). (Continued from abstract 2/35)

**PERIODICAL:** Atomnaya energetika, 1959, Vol. 5, No. 5, pp. 233-244 (URSS)

**ABSTRACT:** The graphite mantle of the reactor (diameter 9.6 m, height 2 m) is built into a cylindrical steel container. The container is filled with airfoils in order to prevent burning of the container. The active zone of the reactor has a diameter of 7.12 m and a height of 6 m. As a lateral reflector there is a layer of graphite 1 m thick. The outer boundary of the reactor is made of a layer of cast iron having a thickness of 0.5 m. It is fitted with a protective layer of paraffine 0.5 m thick. These components serve as a moderator. The outer boundary of the reactor is made of a layer of cast iron having a thickness of 0.6 m. There are 114 channels 1/4 m wide and 1/4 m high. The graphite structure is divided into 114 channels. In the graphite structure openings for fuel elements are provided with fuel cladding.

sent which are cooled by means of boiling water and contain up to 35% per cent by weight of steam at the output. 26 channels are cooled by a steam which is heated up to the automatic regulating temperature. Six channels contain the automatic regulating rods, 15 channels are provided for the temperature rods, and 15 channels are located for the shield rods. The heating bars and cooling tubes are located in 35 channels. The fuel channels consist of the regulating and main rods as well as the control rods. The channels in the active zone are shown in the arrangement diagram. In the circuit diagram for the reactor there is a connection between the reactor, the secondary turbine shaft, the generator, a system of additional heating or the feed water or steam system, and feed pump. The water is heated in a series of ten centrifugal pumps. After entering these channels the water has a temperature of about 300°C and pressure of 155 atm. The mixture of steam and water formed in these channels reaches the separator, where steam and water are separated. From here the water is conveyed to the preheater of the steam generator (which consists of two stages). There is a second stage of the saturation temperature of 340°C (pressure in the sec-

at 3000 (50 sta) down to 3500 G. Heat is transferred to the secondary circuit. The water of this circuit is in the first section of the preheater brought from a tank at 3000 G. to a saturation temperature, which corresponds to a pressure of 110 atm. In the second part it is depressurized until the quantity of steam corresponding to welding attains 40% of the total amount of steam delivered is led up to the separator, where it is heated up to the same temperature as the reactor, where it is used for the heating of the steam channel of the reactor. The steam pressure of 90 atm and a temperature of 50°C. One main built behind the electric power plant consists of 4 parts arranged in a rectangle, and the reactor hall. The operation of each separator, and the reactor hall. For an average chain 17/7000 atm is in excess of 1 atm due to the fact that the dose of radiation is equal to the dose obtained by means of the reactor. The total cost of the total energy of the reactor is 1000000000 rubles per year.

二

M I N A S H I N , M . Y .

PAGE 1 BOOK INFORMATION	20/7/90
Abdulov, M.I. <u>Metallurgical Institute</u>	
Voprosy Tekhnicheskogo (Heat-Exchange Problems) Moscow, 1959. 257 p. Private copy.	
Seconded. 2,000 copies printed.	
Burg, M.L. <u>N.I. Shishkov, Atomizdat</u> N.D. Publishing House G.I.S. Gorizont	
Publ. No. 1.2. 1961.	
Price. This collection of articles is intended for scientific workers, engineers, and postgraduate students specializing in thermodynamics.	
contents. The collection contains problems of heat transfer and heat-exchange possibilities of scientific heat exchange. The heat-exchange theory is outlined, and basic scientific work contributed to its development are mentioned. Thermophysical properties of some metal alloys and alloys are analyzed, and methods to determine them presented. Equipment used for measuring thermal conductivity, heat capacity, and thermal viscosity of these metals are discussed. Results of experiments using the instrumented heat exchange for a water flow in a small channel are analyzed, and the instrument used alone with the pilot plant for studying convective heat exchange in contacting immiscible fluids are described. Instrument and equipment used for determining the linear expansion coefficient of a liquid, and the absorption capacity of a surface are also described and illustrated. A number of equations for solving various thermodynamic problems are presented. Each article is accompanied by references, the majority of which are Soviet.	
TABLE OF CONTENTS	3
Pishchikov, R.A. Development of the Science of Heat Exchange During the Last Forty Years	9
Sloboditsky, B.A., B.I. Salnikov, I.M. Pashkin, V.I. Glazkov, and V.I. Pol'tsikov. Thermophysical Properties of Some Metal Alloys and Alloys	11
Pashkin, I.M. Heat Capacity of Molten Metals	16
Sidorov, E.A. Radiation and Convective Heat Exchange in an Absorbing Medium	49
Fedorovskiy, O.S. Intensification of Heat Exchange for the Flow of Water in an Outer Channel	53
Dorogov, V.M. and O.N. Polyakova. Convective Heat Exchange in a Direct Contact of Immiscible Fluids	67
Astaf'ev, B.I., V.I. Subbotin, M.I. Savchenko, and N.P. Troyanov. Study of Heat Transfer to Sulfur-Piclorum Alloy in a Pipe	80
Rozhdestvenskiy, L.I. Average Heat Transfer for a Turbulent Flow of Butadiene-Bisphenol - Lead Alloy in Short Pipes	96
Ivanovskiy, M.M. Accelerated Method for Determining the Coefficient of Average Heat Transfer in a Pipe	100
Abramyan, M.I. Application of Electrometry to the Solution of Problems of Radiant Heat Exchange	113
Lebedeva, V.I. and B.V. Dryzalin. Heat Transmission From a Wall to a Turbulent Air Flow in a Pipe and the Hydraulic Resistance at High-Temperature Free-Surface Flows	123
Mashchin, M.I., V.I. Subbotin, Yu.A. Uspenskii, and A.I. Smolskikh. Utilization of a Microthermocouple in Studying Heat Transfer	133
Korobov, Yu.A. Unit for Metallisation Carried out by Sublimation of Metals in a Vacuum	202
Korotov, Yu.A. Instrument for Measuring the Consumption of a Liquid	206
Bal'berg, Yu.A. Distribution of Velocity and Temperature for a Turbulent Liquid Flow in a Circular Pipe	208
Shnatseler, B.A. Instrument for Determining the Absorption Capacity of a Surface	233

Sov/2583

PLATE I BOOK EXPOSITION  
International Conference on the Peaceful Uses of Atomic Energy.

2nd. Geneva, 1958.

Sovietisch ukrayin; Jadernaya energetika i radioaktivnye i radioaktivnoye reaktory. (Reports of Soviet Scientists Nuclear Reactors and Nuclear Power). Moscow, Atomizdat, 1959. 707 p. (Series: Itogi Nauki, vol. 2) Frontispiece inserted. 8,000 copies printed.

General Eds.: N.A. Polleshal, Corresponding Member, USSR Academy of Physical and Mathematical Sciences, A.E. Savchenko, Doctor of Physical and Mathematical Sciences, A.I. Sopov, Corresponding Member, Ukrainian SAS Academy of Sciences, I.I. Savchenko, Corresponding Member, USSR Academy of Sciences, and V.S. Savchenko, Doctor of Physical and Mathematical Sciences; Eds.: A.P. Pavlov, Doctor of Physical and Mathematical Sciences; Prof. Yu. D. Kuznetsov, Doctor of Tech. Sci., Prof. Yu. M. Yerushalimsky.

PURPOSE: This book is intended for scientists and engineers engaged in reactor design, as well as for professors and students of higher technical schools where reactor design is taught.

CONTENTS: This is the second volume of a planned collection on the peaceful uses of atomic energy. The six volumes of the reports presented by Soviet scientists at the second International Conference on the Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958, in Geneva. Volume 2 consists of three parts, devoted to atomic power plants under construction. In the first section the second to experimental and research reactors, the second to reactors carried out on them, and the work to improve them, and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. The introduction is the science editor of this volume. See Sov/2581 for titles of all volumes of the set. References appear at the end of the articles.

Bilenskii, R.A., A.L. Frezin, N.A. Mikhalev, A.M. Orlcov, Ye.N. Polleshal, S.A. Tjurin, and P.Yu. Tundrov. Experiment of Operating the First Atomic Power Plant in the USSR and the Plant's Work Under Boiling Conditions (Report No. 2153) 15

Bilenskii, R.A., A.L. Frezin, N.A. Mikhalev, P.I. Aleksandrov, A.M. Orlcov, Ye.N. Polleshal, N.M. Shchegoleva, V.G. Tsvetkov, N.M. Chubarev, G.V. Chirkov, Yu. N. Vinogradov, N.M. Kostylev, L.A. Kuklin, and A.M. Kostylev. A Graphical Survey of the First Soviet Power Plant (Report No. 2159) 36

Aleksandrov, A.M., V.I. Aleksandrov, A.M. Orlcov, Ye.N. Polleshal, V.G. Tsvetkov, N.M. Chubarev, N.M. Kostylev, and A.M. Kostylev. The First Soviet Power Plant (Report No. 2160) 60

Aleksandrov, A.M., V.G. Tsvetkov, Radiation Safety System of the Atomic Power Plant (Report No. 2168) 87

Orlov, V.S. Water-water Reactor (WWR) in the USSR (Report No. 2164) 15

Abramyan, R.A., A.M. Glushkov, V.V. Goncharov, A.I. Zverev, and A. A. Skorobogatov. Heat-producing Elements for Fast Reactors - Basic Type of Atomic Power Plants (Report No. 2166) 119

Zhigulin, G.M., and V.I. Subbotin. Cooling Water-water Reactors (Report No. 2174) 134

Tsvetkov, V.S. and I.V. Frants. A Study of Unsteady Heat Transfer in the Producing Elements of Nuclear Reactors (Report No. 2170) 153

Izrailev, N.M., V.I. Subbotin, and P.A. Sabakov. High-speed Turbine with Regulating the Heat Transfer Coefficient in the Pipe (Report No. 2175) 166

Subbotin, V.I., V.I. Supotkin, V.M. Borishansky, and P. I. Kostylev. Heat Exchange During the Flow of Liquid Metal in the Pipe (Report No. 2180) 176

Abramyan, G.M. Estimates of nuclear Fuel in Fast Power Re-

actors (Report No. 2182) 186

Chirkov, Yu. A. Radiobiological Properties of Liquid Metal in the Thermal Neutron Density Distribution Along the Radius of Assemblies of Rod-shaped Heat Producing Elements (Report No. 2184) 189

MINASHIN, M. Ye.

**"Operating Experience on First Atomic Power Plant."**

report presented at the Conference on Small and Medium Power Reactors,  
Vienna, Austria, September 5-9, 1960.

26,226225555  
S/170/61/004/008/005/016  
B116/B212

AUTHORS: Bondarenko, A. V., Voznesenskiy, Yu. A., Minashin, M. Ye.,  
Sidorova, I. I., Sharapov, V. N.

TITLE: Investigation of the automatic control system for the power  
level of a power reactor

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 8, 1961, 54-62

TEXT: The present paper deals with the calculation of the control system  
of a power reactor. A concrete example is given for the investigation of  
the transient processes for one of the variants of a projected reactor  
having an automatic power control system. A number of questions are dis-  
cussed which are connected with the automatic reactor during non-steady  
operation. The variant mentioned is shown in Fig. 1. The control object  
is built similarly to that of the first atomic power plant in the USSR,  
namely, a heterogeneous uranium-graphite boiling reactor. This reactor has  
an effective neutron life of  $l = 4 \cdot 10^{-4}$  sec and a negative temperature  
effect. Fig. 2 shows the cross section of a fuel element in the graphite

Card 1/11

25555  
S/170/61/004/008/005/016  
B116/B212

Investigation of the automatic ...

block of the core. Three groups of equations are set up: For the change of neutron density in the reactor in time:

$$\frac{dn}{d\tau} = \frac{k_{\text{eff}}(1-\beta) - 1}{l} n + \sum_{i=1}^6 \lambda_i c_i, \quad (1)$$

$$\frac{dc_i}{d\tau} = -\lambda_i c_i + \frac{k_{\text{eff}} \beta_i}{l} n,$$

$$\beta = \sum_{i=1}^6 \beta_i, \quad i = 1, 2, \dots, 6, \quad (2-7),$$

where  $\tau$  denotes the time,  $n$  the neutron density,  $k_{\text{eff}} = k_{\text{eff}}$ ,  $\lambda_i$  the decay constant of the fragments of the  $i$ -th group of delayed neutrons,  $l$  the effective relative yield of delayed neutrons of the  $i$ -th group (taking into account the production energy),  $c_i$  the effective life of neutrons in the .

Card 2/11

25555  
S/170/61/004/008/005/016  
B116/B212

Investigation of the automatic ...

reactor. The deviation  $\Delta k = k_{\text{eff}} - 1$  is caused by an external perturbation ( $\Delta k_{\text{perturbation}}$ ) and by a change in reactivity 1) due to the motion of the control rods (automatic controller):  $\Delta k_{\text{AR}}$ , 2) due to the insertion of emergency protection rods into the core:  $\Delta k_{\text{ep}}$ ; and 3) due to the deviation of the uranium, moderator and coolant temperatures:  $\Delta k_t$ ;  $\Delta k$  combines additively all of these. The second group of equations expresses the change in time of the determining parameters of the automatic control

system. They read:  $\frac{d\Delta\varphi_1}{d\tau} = k_1[n(\tau) - 1]$  (8)

$$T_{\text{MV}} \frac{d\Delta u}{d\tau} + \Delta u = k_2(\Delta\varphi_1 - k_3\Delta\varphi_2) \quad (9) \qquad \frac{d\Delta\varphi_2}{d\tau} = x \quad (10),$$

$$T_{\text{SW}} \frac{dx}{d\tau} + x = -k_4\Delta u \quad (11),$$

$$\Delta k_{\text{AR}} = -k_5\Delta\varphi_2 \quad (12),$$

where  $n(\tau)$  denotes the relative neutron density;  $\varphi_1$  the angle of rotation;

Card 3/11

25555  
S/170/61/004/008/005/016  
B116/B212

Investigation of the automatic ...

of the drive (of the intermediate switch mechanism);  $\varphi_2$  the angle of rotation of the switch mechanism drive;  $u$  the potential at the output of the magnetic amplifier;  $T_{MV}$  the time constant of this amplifier;  $T_{SW}$  the time constant of the switch mechanism;  $k_1, k_2, k_3, k_4, k_5$  denote the transmission coefficients of the control elements. The third group of equations makes it possible to determine the mean change of the uranium temperature ( $\Delta t_u$ ) in the reactor and also the change of  $k_{eff}$  when the uranium temperature changes by  $1^{\circ}\text{C}$  and by  $\alpha k_t$ , if the temperature coefficient of reactivity ( $\alpha_{temp}$ ) is known. These equations read as follows:

$$\frac{d\Delta t_u^I}{d\tau} = -0,650 \Delta t_u^I + 0,596 \Delta t_f^I + 8,63 [n(\tau) - 1]; \quad (13)$$

$$\frac{d\Delta t_u^{II}}{d\tau} = -0,654 \Delta t_u^{II} + 0,600 \Delta t_f^{II} + 16,2 [n(\tau) - 1]; \quad (14)$$

$$\frac{d\Delta t_u^{III}}{d\tau} = -0,661 \Delta t_u^{III} + 0,607 \Delta t_f^{III} + 20,4 [n(\tau) - 1]; \quad (15)$$

Card 4/11

25555

S/170/61/004/008/005/016  
B116/B212

Investigation of the automatic ...

$$\frac{d\Delta t_u^{\text{IV}}}{d\tau} = -1,52 \Delta t_u^{\text{IV}} + 20,4 [n(\tau) - 1]; \quad (16)$$

$$\frac{d\Delta t_f^{\text{I}}}{d\tau} = 1,77 \Delta t_u^{\text{I}} - 7,64 \Delta t_f^{\text{I}}; \quad (17)$$

$$\frac{d\Delta t_f^{\text{II}}}{d\tau} = 1,69 \Delta t_u^{\text{II}} - 4,99 \Delta t_f^{\text{II}} + 3,04 \Delta t_f^{\text{I}}; \quad (18)$$

$$\frac{d\Delta t_f^{\text{III}}}{d\tau} = 1,48 \Delta t_u^{\text{III}} - 5,67 \Delta t_f^{\text{III}} + 3,33 \Delta t_f^{\text{II}} - 0,015 \Delta t_f^{\text{III}} \Delta t_u^{\text{III}}. \quad (19)$$

where  $\Delta t_u$  denotes the deviation of the mean uranium temperature in the cross section of the core in question from a nominal value;  $\Delta t_f$  the deviation of the mean coolant temperature in a certain section (the active zone is divided into several sections with respect to height: I, II, III, IV). It is assumed that the heat removal is concentrated in the layer having radius  $r_3$ , and that the fuel mass will produce an additional thermal resistance. Eqs. (1) - (19) have been investigated with the help of a re-

Card 5/11

25555

S/170/61/004/008/005/016

Investigation of the automatic ... B116/B212

actor simulator considering 6 groups of delayed neutrons and with three simulating devices of type MH-7 (MN-7) for work control of reactors. The set of equations is schematically shown in Fig. 3. The following results have been obtained by a study of the automatic controller and reactor for non-steady operation: 1) Representation in one-group approximation results in an excessively high maximum reactivity jump permissible; therefore, 6 groups have been taken. 2) For a discontinuously changing reactivity, the increase of the amplification factor of the automatic controller will first decrease the power excess but will also increase the control time. Increasing the amplification factor by a factor of three will keep the system stable. 3) When the temperature effect ( $q_t = 0$ ) was not taken into account, one obtains  $\Delta k_{perm} = 0.000472$  and a linear dependence of the permissible reactivity jump of  $q_{temp}$ :  $\delta \Delta k_{perm} / \delta q_{temp} = 1.45$ . 4) The maximum permissible amplitudes of reactivity pulsation in the range of 0.05 - 0.3 cps, which can be applied to the automatic controller, are given as:  $\Delta k = 0.0002$  at  $q_t = 0$  and  $\Delta k = 0.000325$  at  $q_t = -0.67 \cdot 10^{-4}$ . Therefore, the temperature effect has to be determined accurately.

Card 6/11

Investigation of the automatic ...

25555  
S/170/61/004/008/005/016  
B116/B212

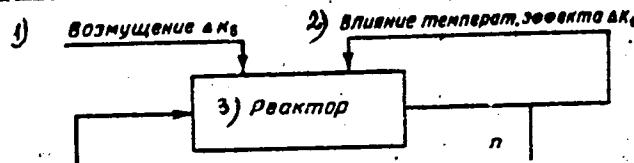
5) Even at resonance frequencies the automatic controller is able to take the pulsation of the coolant amount, and the amplitudes of the corresponding stabilized power fluctuations will be smaller than the permissible maximum. A. K. Krasin, Academician of the AS BSSR, is thanked for interest in this work. There are 5 figures and 2 Soviet-bloc references.

SUBMITTED: April 8, 1961

Fig. 1: Block diagram of the chief components of the automatic control system.

Legend: 1) perturbation; 2) influence of the temperature effect; 3) reactor; 4) control rods; 5) neutron detector; 6) power transmitter; 7) signal amplifier; 8) intermediate switch mechanism; 9) comparator; 10) drive; 11) magnetic amplifier; 12) switch mechanism.

Card 7/11



ACCESSION NR: AP4012793

S/0170/64/000/002/0051/0061

AUTHOR: Minashin, M. Ye.

TITLE: Afterheat generation from the decay of fission fragments

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 2, 1964, 51-61

TOPIC TAGS: afterheat, fission product disintegration, afterheat power, U<sup>235</sup>

ABSTRACT: The determination of the power of the afterheat generation of  $\beta$  and  $\gamma$  fission fragment radiation is important for the theory and design of reactors. The basic paper dealing with the intensity of the  $\beta$  and  $\gamma$  radiations is the one by K. Way and E. Wigner (Phys. Rev., 73, No. 11, 1958). However, the semiempirical Wigner-Way formula is convenient only for  $t > 10$  sec. The question remains open what the power of the  $\beta$  and  $\gamma$  radiations from  $0 \leq t \leq 10$  sec is. The author tried in the case of fission fragment of U<sup>235</sup> to calculate the power of the radiations for an arbitrary instant of time using recent data for the lifetimes of various disintegrating nuclei. Up to a certain point the calculations represented the repetition of what has been done in [1]. Since there are few data about the chains of disintegration, the author preferred the statistical approach to the

Card 1/43

ACCESSION NR: AP4012793

total  $\beta$  and  $\gamma$  radiation yield. The calculations are based on the droplet model of the nucleus as developed by Fermi, including the corrections by P. Fong (Phys. Rev., 102, No. 2, 1956). The disintegration constants  $\lambda$  are taken from the general theoretical relationship  $\lambda(A, E, \Delta E)$  given by G. Gamov and C. L. Critchfield (Theory of Atomic Nuclear and Energy Sources, Oxford, 1949) since an attempt to obtain  $\lambda$  by extrapolations yielded too short lifetimes. The total decay energy of the fragments turns out to be 21.24 Mev, while the average kinetic energies of the  $\gamma$  quanta, electrons, and neutrinos is approx. 5.8, 4.8, and 7.1 Mev respectively. The afterheat power at any instant

$$N_{\text{fragm}}(t) = 0.5 \cdot 1.6 \cdot 10^{-16} \sum_i A_i \lambda_i \int_{t_0}^t \exp[-\lambda_i(t-t')] F(t') dt', \quad (35)$$

is obtained from the time relation of fragment energy using statistical considerations. Here  $A_i$ 's are certain constants introduced during approximation processes, while  $F(t')$  is the intensity of fission of heavy nuclei within the volume  $V_k$  at the instant  $t'$ . In case  $F(t')$  is a constant, Equation (35) takes the form

Card 2/4<sup>3</sup>

ACCESSION NR: AP4012793

$$N_{fragm}(t) = 0.8 \cdot 10^{-16} F_0 \sum_i A_i \left\{ 1 - \exp \left[ -\lambda_i(t - t_0) \right] \right\}. \quad (37)$$

Similar equations are given for the case when the irradiation is continued past the instant  $t_0$  until an instant  $t^*$  and the relationships cover the interval  $t > t^*$ , and  $t_0 \leq t \leq t^*$ . On Fig. 3 of Enclosure 1 the theoretical results are compared with experimental data given by I. R. Stehn and E. F. Clancy (Report No. 1071 at 2nd Geneva Conference 1958). "The author thanks Academician of the AN BSSR A. K. Krasin for his continuing interest, and Aspirant I. K. Shishkina for the processing of the material and a certain number of calculations." "Orig. art. has 40 formulas, 3 figures, and 1 table.

ASSOCIATION: None

SUBMITTED: 13Sep63

DATE ACQ: 26Feb64

ENCL: 01

SUB CODE: NS

NO REF SOV: 006

OTHER: 009

Card 3/4 3

MINASHIN, V. P. and KALASHINKOV, N. I.

"Engineering Design of Cavity Resonators for Use in the Centimeter-Wave  
Band, Radiotekhnika, No 5, 1949.

Central Scientific Research Institute of Communications, Ministry of Communications  
(TsNIIS)

MINASHIN, V. P., Engineer

"Calculation of the Frequency of the Natural Oscillations of Tuned  
Cylindrical Resonators." Sub 26 Oct 51, Moscow Order of Lenin Power  
Engineering Inst imeni V. M. Molotov

Dissertations presented for science and engineering degrees in  
Moscow during 1951.

SO: Sum. No. 480, 9 May 55

BORODICH, S.V.; MIKASHIN, V.P., redaktor; SOKOLOVA, N. Ya., tekhnicheskiy redaktor.

[Multichannel radio relay communication lines] Mnogokanal'nye radioreleiye linii sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1953. 45 p. [Microfilm] (MLRA 8:9)  
(Radio relay systems)

MINASHIN, V. P.

USSR/Electronics - Communications

Card 1/1 Pub. 133 - 4/16

Authors : Borodin, S. V.; Minashin, V. P., and Sokolov, A. V.

Title : High frequency apparatus for radio relay communication lines

Periodical : Vest. svyazi 5, 7-10, May 1955

Abstract : A description of the operation and construction of component parts of high frequency apparatus used in telephone communications relay stations, is given. The apparatus is used in conjunction with duplex operation of wide-band frequency, condensed at the central K-24 station for a simultaneous transmission and reception of 24 telephone signals. Illustrations drawing, diagrams.

Institution: .....

Submitted : .....

MINASHIN, V.P., kandidat tekhnicheskikh nauk.

Frequency-modulated oscillator with a reactance tube. Elektrosviaz'  
10 no.2:26-32 P '56.  
(Oscillators, Electron-tube)

(MLRA 9:6)

AUTHOR:

Minashin, V.P.

SOV/106-58-4-4/16

TITLE:

Design of Coaxial Circuits for Decimetric Wave Amplifiers (K raschetu koaksial'nykh konturov dlya dmv usilitely)

PERIODICAL: Elektrosvyaz', 1958, Nr 4, pp 24 - 29 (USSR)

ABSTRACT: The equivalent impedance obtained for the anode load of wideband, decimetric wave, triode amplifiers is, in the majority of cases, much less than the optimum value corresponding to the maximum output power. Therefore, for effective working, resonator dimensions which give the greatest possible value of the load impedance for a given band width should be chosen. For example, with the use of coaxial resonators for amplifier circuits, the greatest anode load impedance is obtained by working with one high-frequency voltage node in the circuit. However, for the shortest decimetric waves, the resonator dimensions are so small that difficulties arise in tuning the resonators to the required frequency and ensuring correct matching to the load. When working with two voltage nodes, the equivalent impedance of the coaxial circuit falls sharply but the physical dimensions become reasonable. Between these two extremes, there is an intermediate circuit

Card 1/5

SOV/106-58-4-4/16

## Design of Coaxial Circuits for Decimetric Wave Amplifiers

in which the short-circuit at the end of the coaxial line section is replaced by a capacity connected in series with the centre conductor. This alteration gives, on the one hand, sufficiently large resonator dimensions and, on the other hand, if other conditions are equal, ensures a higher load impedance compared to circuits working with two voltage nodes.

The equivalent circuit is considered with the object of finding suitable circuit dimensions which will give the greatest equivalent impedance. Figure 1 shows the simplified circuit of a coaxial circuit containing two capacities. Capacity  $C_H$  represents the inter-electrode capacity of the valve. At resonance, the absolute value of the input impedance of the line section of length  $l_1$  at points 1 - 1 should equal the impedance of the capacity  $C_H$  and also be inductive. The modulus of the input impedance will equal

$$Z = \rho \frac{\rho \omega C_1 \operatorname{tg} \beta l_1 - 1}{\rho \omega C_1 + \operatorname{tg} \beta l_1} \quad (1)$$

Card 2/5

SOV/106-58-4-4/16

## Design of Coaxial Circuits for Decimetric Wave Amplifiers

where  $\rho$  is the wave impedance of the line:

$$\beta = 2\pi/\lambda = \omega/c .$$

Eq.(1) shows that values of  $\rho$ ,  $C_1$  and  $l_1$  can be chosen to give any particular value of  $Z$ . The combination of the above parameters which will give the greatest equivalent circuit inductance is sought. For a given value of circuit  $Q$ , determined by the bandwidth, this combination will also give the greatest load impedance. The equivalent inductive impedance of the circuit is determined by methods given in Ref 1. The circuit dimensions are most easily obtained by using graphs of  $\omega L$  and  $Q$  multiplied by the input conductance of the valve  $Y_{BX} = \omega C_H$ . These values are obtained by using the fact that at resonance, the absolute values of the conductance of the valve and of the line are equal. The length of the coaxial line section will alter depending on the value of the parameter  $\rho \omega C_1$ . For a selected value of the parameter  $\rho \omega C_1$  the value of  $\beta l_1$ , corresponding

Card 3/5

SOV/106-58-4-4/16

## Design of Coaxial Circuits for Decimetric Wave Amplifiers

to the maximum value of the product  $Y_{BX}\omega L$ , is found. From this value of  $\beta l_1$  and the value of  $\rho Y_{BX}$  the corresponding basic dimensions of the resonator can be determined. To evaluate the change in the line length, the length of the short-circuited resonator with one high-frequency voltage node is compared with the length of a resonator of the form considered tuned to the same frequency and giving equal wave impedance (Figure 3). It is shown that optimum dimensions of the circuits are realised when the load impedance ( $Q$  is fixed for a given band) reaches its greatest value. In Figure 5, are presented curves for determining the optimum values of the parameter  $\rho\omega C_1$  and for the length of circuits in which characteristic impedance equals the maximum or corresponds to 0.8 to 0.9 of the maximum value. The circuits can be tuned in two ways: changing the capacity  $C$  or changing the length  $l_1$  of the circuit. The tuning curve of the circuit tuned by altering the capacity  $C_1$  is shown in Figure 7. A fundamental short-

Card4/5